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Specialized Horticulture.

THE request for certain information about Irises, which a correspondent makes in another column, suggests a subject to which we have before alluded, and that is, the instruction and recreation which can be derived from the careful cultivation of a single class of plants. Irises constitute a varied and extensive genus of perennial plants, and they rank among the most beautiful of garden-plants. They range in size from that of the towering Iris (Moræa) Robinsoniana, which has been figured in our columns, to the delicate little species like our own Crested Iris, which nestle close to the ground. Some of them are of the easiest cultivation, like the hybrids known as German Irises, and others like some of the Oncocyclus group are perverse, or, at least, wayward in cultivation, and require sympathetic care and the highest skill. Irises have always been favorites of those who devote themselves to the cultivation of herbaceous perennials, and yet there is enough to learn about the genus to fill the leisure hours of any one for years to come. Occasionally there is an enthusiast like Professor Michael Foster, of Cambridge, England, who keeps on the alert for every novelty of the family, and who tests each new one in his garden, but the flowers, in spite of their beauty, have never had any vogue like Chrysanthemums or Dahlias, and no Iris society has yet been formed, to our knowledge. So far as we know, there are not many large collections in this country, although one of our correspondents, Mr. J. N. Gerard, has cultivated about one hundred and twenty-five species and many more garden varieties.

Few occupations are more fascinating than specialized gardening of this sort. It is easy enough to get a general idea of any class of plants, but the farther we descend to particulars the more there is to study and to admire. If we care for garden decoration simply, we select for our purpose such plants as can be used with the most marked decorative effect; but as soon as we begin to have a special interest in one class of plants we are drawn to them as to personal friends by an entirely different kind of attraction. We are eager to know all about their relatives and the habits of the family, and we are ready to study and explore every field from which any knowledge of our favorites can be gained. One can soon learn to grow, for example, all the species and varieties of Iris which make a show in the garden, but if he aims to be an expert in the cultivation of Irises, or to possess himself of authoritative knowledge concerning them, if to his admiration of their beauty and his affection for the special genus he adds the enthusiasm of a collector, he will have not only a diversion that will occupy all his leisure moments, but one that will also absorb as large a fraction of his surplus revenue as he chooses to appropriate for the purpose.

The enthusiast is cheered and sustained in all his labors and studies by the hope of securing a plant he has never seen, or of inducing one to flower with which he has often failed; and yet the results of his thought and care extend far beyond his personal gratification. The men who make a special study of a single class of flowers are the ones who really add the most to the general knowledge of plants. There is enough in many single genera of plants to occupy the leisure of a lifetime, and the plants only yield up their secrets to those who give them patient and affectionate study year after year. We have mentioned Irises, but, of course, there are many other genera which have their ardent devotees—enthusiasts who have their reward in the daily delight of increasing knowledge, but who also enlarge and enrich the art of horticulture by their experience. Daffodils, in their unending variety, have long been favorites of specialists in Europe, although large collections of them are rare in this country. Lilies appeal to a still larger class. The Saxifrage, hardly known in gardens conducted on conventional lines, has already become a pet flower of the specialist, and a list of the different species which can be furnished to buyers will occupy several pages in a catalogue like that of Monsieur Correvon, of Geneva. The various articles which we have published from the pen of Mr. W. E. Endicott show how wide is the range of knowledge and experience he has gained while recreating himself with the cultivation of the beautiful Cape bulbs, and his instructive writings on the subject are admirable examples of the extent to which the horticultural world is at last indebted to these special students.

When we begin with the greenhouse there is no end to the attractive families which invite special investigation. But if we undertake any branch of specialized horticulture, one of the first things we learn is not to attempt too much. We do not need to abandon all interest in general horticulture, for very likely a special devotion to one class of plants will give us an increased pleasure in all others. But the field of our systematic operations must be limited, and we shall be surprised to find that however we restrict its boundaries we shall still have too much for the careful study and experiment we feel inclined to give. This is the rule, and in this way has horticulture ever received its strongest impulse. In this direction too, lie some of the purest delights of the garden; in fact, there is no other way in which so much satisfaction can be derived from the cultivation of plants.

IT is gratifying to observe that the movement to preserve the forests of the White Mountains, of which we gave an account some weeks ago, is meeting with very general endorsement by the papers of New England and the middle states, and that a fund has been started by the Boston *Herald* to aid this campaign of education. There is no need of any additional argument to show that the loss of these New Hampshire forests would be in the nature of a national calamity, or to prove that such a danger is constantly threatening so long as these forests remain in private hands and under our present laws. It is not an easy problem to decide just how this danger may be averted with the least friction to private interests and established customs, but

certainly nothing but good can come of such discussions as those now carried on by Mr. Harrison in every part of the state of New Hampshire where an audience can be gathered. Of one thing we may be assured, and that is that no effective action will be taken by the men who are chosen by the people of New Hampshire to make their laws until the people themselves are thoroughly educated to comprehend and appreciate the paramount importance of these forests to their general prosperity.

As is well known, the vineyards of California, especially those in the southern part of the state, have suffered severely from a disease first recognized by the appearance of discolored spots on the leaves. In some localities it is known as the Black Measles, and the damage to the crop has been very considerable. A number of persons have attempted to discover the cause of the disease, but hitherto no one has succeeded in detecting the fungus, if it be a fungus, which causes the trouble. Recently Messrs. Viala and Sauvageau have published the results of their investigations at the Ecole de Viticulture, in Montpellier, France. They recognize two diseases very similar in the effects they produce, one found in Europe and the southern United States, the other only in California. The former was first noticed in France in 1882, and is called La Brunissure; the latter, called by Viala and Sauvageau Maladie de Californie, is decidedly the more destructive of the two diseases. Both diseases are caused by species of Plasmodiophora, a genus of Myxomycetes, to which belongs the fungus which produces the so-called club-foot of cabbages. The fungi of this group consist merely of masses of protoplasm without the definite mycelial filaments of other fungi. The fungus of La Brunissure is called by Viala and Sauvageau Plasmodiophora vitis, and that of the Maladie de Californie, P. Californica. In neither species were they able to detect spores. The plasmodium of both species is found in the green cells of the leaves, especially in the large palisade cells, which are found just beneath the epidermis of the upper side of the leaves, and it varies greatly in shape and amount in different cells.

On Broad Top.—I.

WHERE is Broad Top? What is it like; and what do you do there? For many years, as the time approached for our autumnal trip to this out-of-the-way part of Pennsylvania, we have been asked these questions and have found no trouble in answering the first, but the last two are more difficult to explain, for the place is so unlike all conventional mountain resorts. It is not, indeed, a resort in any sense, but a mountain wilderness, happy in having few special features, no points of interest, and little of what the reporters call "fine scenery."

Charles Dudley Warner somewhere speaks of tourists who search for "scenery that ranges from the two-dollar to the five-dollar a day kind," and this is not the place for them, nor can they understand the beauty of these shaded moss-grown roads on the abandoned farms (see illustration, page 571); of the woods and sunny meadows; above all, of the sense of remoteness which forms much of the indefinable charm of the place. It has had devotees in our family for years, since two belated hunters found refuge overnight in the little log-house that not only shelters us when we come to the mountain, but is still the home of the same family who lived in it then. That family, and others scattered at intervals over the mountains, are the remnants of a life that is passing away, a primitive Pennsylvania that will soon vanish as the spirit of "Progress" spreads over these wilds, and railroads, mines and hideous coke ovens invade the "hollows," and the "runs," that have heretofore been so beautiful.

The Broad Top country is a mountainous region with an average altitude of 1,800 feet, lying in Bedford, Huntingdon and Fulton counties, and is the eastern limit of the bituminous coal measures. It is reached on its northern and western borders by the East Broad Top and Huntingdon Railroads, the former connecting with the Pennsylvania Railroad at Mt. Union, the latter with the same road at Huntingdon, and between these two places are some of the boldest and most beautiful mountains to be found along the Juniata.

The southern and eastern borders of the country can only be reached by mail-wagon or private conveyance, as Fulton County does not possess a mile of railroad, though the South Pennsylvania road, if ever built, will cross it and open up to the world its beautiful valleys and mountains. Although the general outlines of the mountains follow the parallel system so noticeable in Pennsylvania, here in the coal country they are picturesquely broken, the valleys in many instances are really deep ravines, taking their names from the streams that run their short but active life through them. These streams were once the haunt of the trout, and their banks the home of the Rhododendron, but some of the most wild and beautiful ones are now blackened in their lower reaches by the wash from mines and dumps, and the ravines are made hideous by squalid villages.

The mountains are tremendously steep, but there are few rocky precipices, as in most instances the outcropping rock has been so shattered by the action of frost and time that landslides have been formed, smaller, but like those so noticeable along the Narrows of the Juniata. The mountains have been, and still are in many places, magnificently wooded, and the forest-growth is most varied and interesting; many of the White Oaks are superb, but with the increase of building one fears their days are numbered. The work of the saw-mills is, of course, a necessity, but the waste is so terrible that we carefully avoid seeing one in operation a second time, for it is painful to note the great branches left in the woods and the slabs that are run directly from the saw into the fire. The waste of a saw-mill, however, is a trifle compared with the destruction of the bark-peelers, who, after gathering their harvest, leave the spectral bodies of what were once trees to a slow decay, unbeautified by the kindly moss which almost at once begins to cover the fallen timber not denuded of its bark.

On the map at the junction of the three counties above mentioned is an irregular expanse marked "Broad Top Mountain," between eight and ten miles long, and varying from two to four miles in width. The greatest altitude, about 1,800 feet, is at the southern extremity. From this head, which is a wilderness miles in extent, enormous arms and "saw-teeth" project boldly into, and separate, the valleys below. The township roads crossing the lower end of the mountain are built along and down these arms, and, except for occasional reaches of Oak-barrens on the higher levels, one may drive for miles in any direction through almost continuous shade. The roads are of two kinds—those that are "wagoned a heap" and those that "hain't wagoned so much"—and we find the pleasantest drives are those where the wagon goes ahead and we follow on foot. The mountain is literally a broad, though by no means a flat, top, and has a little system of its own of inner ridges, plateaus and an upland valley formed by Trough Creek, which rises near its head, and almost equally dividing this inner table-land, flows north until, after a long and devious journey, it empties into the Juniata.

The country was settled about the beginning of the Revolutionary War by English and Scotch-Irish emigrants from Maryland, who took out warrants for land that, in most instances, was held for several generations by descendants of the original settlers until the absorption of the small holdings by the large coal and iron companies.

A good spring was the first requisite for a site, and that once found, land was cleared, log-houses built, orchards planted, until, in a few years, farms, some of them quite extensive, were scattered over the mountains, though at a safe distance from their nearest neighbors, as game was a necessity. About the beginning of this century coal was discovered, and, with the advent of the railroads, that Golden Age, when "a man could open his door at sun-up and shoot a deer in his garden," when turkeys and pheasants ruined the buckwheat-crop, and when no man was considered fit to hold a rifle who shot game anywhere save through the head, disappeared forever.

About 1855 there was a mining and railroad boom. Most of the land passed into the possession of corporations, and the movement has continued until now a few large companies control the country. On Broad Top Mountain, with the exception of a few farms on the northern border, held on leases from the companies owning them, all the farms were, of course, abandoned.

The men who sold them felt themselves the possessors of immense wealth, and, in many cases, simply departed with their goods and chattels, leaving their houses and barns to the elements. Others removed their logs and timber and built elsewhere, but one and all left behind them what was almost imperishable—the restful beauty of the place. The little mountain farm that we have known so long lies within the encircling rim of the mountain, upon a partially cleared promon-

tory of land, that juts down from the upper plateau, between forests that clothe its sides and lower extremity, and conceal two little tributaries of Trough Creek, which unite near its base. With one single exception, the nearest human habitations are more than a mile distant, out of sight and sound, on the outer side of the western ridge.

Wray's Hill, which forms the eastern ridge, does not show a sign of life, and, except toward the north-west, there is not a house within a radius of five miles, though within that same radius are nine abandoned farms and several small clearings. Some of the farms are included in the leases held by two or three families of still occupied farms, and they keep in repair fences about the old orchards, gather the fruit, pasture cattle in the old meadows, and when mountain fires occur are bound to protect the company's property by "fighting fire," whether upon their own or the abandoned farms.

The middle of September finds us, after a railway journey up the always beautiful Juniata, landed in a most unpromising little station in the heart of the coal country, but even the dust and grime of the place cannot conceal the beauty of the hills and mountains surrounding it. We soon find the old wagon, gun-case and camera are stowed away, and we start off for our two hours' drive, most of it a steady climb.

For three miles up the narrow valley the road has lost its original beauty, as the flood of 1889 changed the course of the stream, and covered the valley with the waste from the dumps. Most of the foliage is still as green as in midsummer, but as our road ascends higher and higher, giving us views, now down a deep ravine, then off to the hills, we recognize the familiar landmarks, and finally, after a mile of road that would have driven Macadam insane, we turn the shoulder of our own mountain, and the panorama of what is always our first and last great view is spread out before us. In the right foreground is Round Knob, showing faint tints of gold and flame along a line of Hickories and Maples at its base, and in the distance rises tier upon tier of the Alleghanies until the remotest line is merged into clouds.

Plunging into the woods we continue our ascent on a fairly good township road until we leave it for the series of boulders and rocks that form the road to our destination, for few of the mountain farms are found near the public road. A short climb and we are out of the woods, on the level, and surrounded by the most brilliant, surprising mass of color. The Thorn Locusts and scrub Oaks, which here form a short stretch of barrens, seem to support beds of color, young Sassafras-trees, which are in coloring the counterpart of Parrot Tulips, and are absolutely blazing in the brilliant sunlight. Then into the woods and down a short distance, and as we emerge into the sunlight the little farm is spread before us; the orchard with old cider-press in its corner, Wray's Hill opposite us, the little log-house just as it looked last year, the same Dahlias apparently by the gate. The wagon stops, the same voices rise to greet us, we step down and realize that we are once more on Old Broad Top.

Harrisburg, Pa. *Mira Lloyd Dock.*

Late Autumn in The Pines.

I HAVE just returned from a ramble in the Pines, and, notwithstanding the excessive drought during late summer and autumn, I found a greater number of plants in flower than usual at this time of year. The Soapwort Gentian was never more beautiful than now, and good specimens of Gentiana angustifolia were also in the damp barrens, and little Bartonia tenella was still in bloom. Some belated flowers of the Meadow Beauty (Rhexia Virginica) were looking as if they had forgotten that it was late in November. Rudbeckia laciniata was here with long, drooping yellow rays, which looked charming with the blue Gentians. Blue and white Asters were not rare. A. nemoralis was particularly good. Two or three species of Golden-rod were also seen in damp places vieing with the Asters in perfection of leaf and flower. The most handsome of these late-flowering Golden-rods are Solidago sempervirens and S. elliptica; both have smooth shining foliage as beautiful as the flowers.

Along the margin of a pond I found Coreopsis rosea still in bloom, and Ladies' Tresses (Spiranthes cernua) were hidden among the grasses, bright and sweet as they were a month before. The Bur-Marigold (Bidens chrysanthemoides) was abundant in wet places, and it is one of our handsomest late flowers. It has broad deep yellow rays, an inch or more in length, which, together with its connate leaves and long-continued bloom, make it a very desirable plant. The Mist flower (Conoclinium cœlestinum) was also here with pretty clusters of blue flowers. Coils of matted flowers of the Dodder were still blooming, looking almost like ropes twisted close and tight around the plants, sapping and drawing the life from their hosts. In the dry upland Pines I found Chrysopsis Mariana in bloom, and the pretty blue flowers of Diplopappus linariifolius were also here, and looked charming with the yellow Chrysopsis.

It is quite remarkable how well the foliage appears on most all of the low-growing plants. Even in the dry barrens, where the white sand looks as if there was no moisture in it, plants seem as fresh and bright as if there had been copious rains. The root-leaves of the Rattlesnake-weed (Hieracium venosum) were vigorous, lying in flat rosettes on the ground, each leaf handsomely marked with purple and lighter shades, and making them very ornamental. One of the most interesting plants in the dry sand was little Lechea minor; it had grown in many forms, but had mostly assumed the shape of miniature trees, none over a foot in height, yet perfect mimics of their large neighbors, under whose shelter they grew. Some had round dense heads on slender stems; others were forked and branched to simulate the varied forms of forest-trees. And the coloring of the tiny leaves was beautiful, too. Some of the plants were still a vivid green, while others had taken on the bronze and purple of autumn. The grayish looking Hudsonia tomentosa was a near neighbor of Lechea and was fresh and thrifty; but we know the secret of the good looks of these plants, for their roots reach down deep to the level of constant moisture.

Another interesting plant not at all affected by the long drought is Chimaphila maculata. I found thick masses here and there, covering two or three square yards with bright variegated foliage, fresh and shining, and dry seed-pods held above the leaves on erect stems to remind us how charming they were in midsummer when covered with fragrant blossoms. This charming plant, if given the right conditions, can be grown on the home-grounds quite easily. It loves the shade, and if one has not the time or inclination to prepare a place for it, a few plants set beneath the dense shade of a low-growing evergreen will flourish and give great pleasure. Two of my near neighbors have both species of Chimaphila growing and flowering in perfection under evergreens where they never set the plants. In all probability they were in the ground when the trees were set, some twenty-eight or thirty years ago, when the place was fresh from the forest. At all events, here they are, with no care, as fine plants as I ever saw. But they are entirely hidden from view, and we can only see them when we part the thick branches of the trees. I am sure a mass of these plants can be grown where they can be seen, and I am preparing a place in an angle of the house where the sun cannot reach them, and they are to be planted in the same leaf-mold where they naturally grow.

The grass-like leaves of Xerophyllum do not seem to be at all affected by the drought, and the Pitcher-plants look as fresh as usual even in quite dry places. But the trailing Arbutus has suffered considerably, and the leaves of many plants are dry and brown, with long stems entirely dead. Pyxidanthera is also shriveled and dead in many places.

The foliage is still clinging to many of the deciduous shrubs as well as to some of the trees. The Vacciniums are gorgeous in color, and so is Leucothoë racemosa and Andromeda ligustrina. This brilliant color, mingled with the deep green, shining foliage of the Laurel and Holly, makes lovely and effective passages in the Pines. The large leaves of Magnolia glauca are still green, and so are the leaves of the Alder (Alnus serrulata). The young Pines (Pinus rigida) are looking better than they have for several years past. Something has happened to their insect enemies, so that the trees that were not killed have made a rapid growth the past season.

The little bushy scrub Oaks (Quercus prinoides) are holding their foliage, while the acorns have mostly fallen. These acorns are small and round, all nearly of the same size, and when strung on stout linen-thread can be woven in many fanciful designs. At the base of the acorn-cup I often find clusters of little abortive acorns, which I have never seen in any other species.

The fruit of many plants is now at its best, and very handsome. Baccharis is one mass of plumy white pappus, and its leaves are still green. The Hollies suffered less than usual from the ravages of the rose-bug this season. The marauders left some of the flowers, too, so that we find berries here and there on the trees. The bright red berries of the Black Alder (Ilex verticillata) are abundant, and the grayish fruits of the Bayberry are clustered thickly along the stems among the shining and fragrant leaves. The Bitter-sweet (Celastrus scandens) has opened its orange-colored pods, displaying its pretty scarlet seeds. Several species of Smilax are full of clustered fruit that will remain all winter long, and the Poison Sumach

has hung out its whitish drooping fruit in tempting array, but, handsome as it is, it cannot be allowed admittance to our collection.

Vineland, N. J. *Mary Treat.*

Gardening in the Confederacy.

IN the twist which war times gave to southern life no interest or vocation entirely escaped. Domestic economy was revolutionized. The blockade having cut off the supply of northern and foreign goods, a home-made substitute had to be contrived for every article of clothing, for articles for household and for farm use, and for every article of food except the plainest and coarsest. Wood took the place of sole-leather in shoes, and coarse homespun the place of daintier fabrics. Corn-meal supplanted wheat-flour, and sorghum-syrup became the national sweetening, finding its way into most of the products of the Confederate kitchen, from counterfeit coffee to pound-cake and ice-cream.

Gardening, of course, underwent a change along with other things. Northern-grown seed, which had now come into almost universal use, being no longer obtainable, every housewife was driven back upon the old-fashioned method of saving her own seed. There was a touch of irony in the fact that the few seeds brought in through the blockade were flower-seeds. The demands of the new household economy worked considerable change in the product of the garden. Okra then first came into general use, but I never knew a pod of it to be eaten until after the war, though some families doubtless used it much earlier. We grew it as a substitute for coffee. The dry seeds were collected, parched, ground and infused after the manner of the true Arabian berry. At first okra-coffee had numberless rivals—parched meal, dried sweet potatoes, wheat, rye, and even cotton-seed, persimmon-seed and dandelion-seed—but it finally, I believe, supplanted them all except rye, with which it maintained a strong and lasting rivalry. Not infrequently heated disputes would occur between advocates of these rival substitutes. In fact, some hard-time connoisseurs became so wedded to okra-coffee, sweetened with sorghum, that they were loud in resolves to drink no other even though returning peace should bring back the genuine coffee. And when I add that some of these resolves outlived the war a twelvemonth, it will be seen that there must have been a great deal of earnestness and sincerity in them.

The garden assumed in those scant times a tenfold importance, and great efforts were made to have good ones. The need was urgent that every possible source of food should be turned to account. The tithes and donations to the Confederate Government made deep inroads into all staple products of the farm. Besides the heavy Confederate and state taxes, a tenth of all non-perishable articles of food for man and beast was taken for the armies. What was left, beyond barely enough to feed the denizens of the farm, was liable to seizure on emergency by Government officers. The capacity of the farm was also seriously curtailed by the impressment of work-animals for the cavalry and artillery service and of the negro-men as laborers on the forts and fortifications, and, to complete the disaster, the trained and trusted servants were generally the first to fly to the Federal lines. As a consequence, materfamilias had to conduct gardening operations under great disadvantages—sometimes with unskilled hands from the "quarter," oftener still with pickaninnies, scarcely more amenable to discipline than so many wild creatures from the woods.

The energy of the southern women triumphed here as it did over so many other obstacles. Vegetables enough were raised not only for home use, but to give to the numerous families of refugees, which every neighborhood was sure to contain.

Medicine was the scarcest of all scarce things, and, many of the country physicians being absent as field and hospital surgeons, recourse was had largely to such medicinal herbs as the garden could afford, and thyme, sage, horehound and other garden-grown herbs were largely depended upon in sickness. The general health of the people was never better than during these times of scarcity, and this happy result was doubtless largely due to the more general use of simple garden products for food, and the disuse of drugs.

Kittrell, N. C. *O. W. Blacknall.*

If the fine art of landscape-gardening is to obtain its most certain and striking effects, it must devote itself to emphasizing natural characteristics. A true park is a place where art has enhanced natural effects, and it can be nothing else. Whatever contributes to better determine or to emphasize natural character is a resource of the art of landscape; whatever destroys, enfeebles or confuses that character the art forbids.—*Hirschfeld's Theorie der Gartenkunst*, 1777.

Plant Notes.

Celastrus scandens.

THIS plant, which is figured in our illustration on page 569, is one of those inhabitants of the forests of eastern North America which, for certain decorative purposes, can hardly be praised too highly, although American gardeners neglect it as they neglect many other beautiful native plants, because it does not come to us from European nurseries, and is not, therefore, expensive and fashionable. The climbing Bitter Sweet, or Roxbury Wax Work, as Celastrus scandens is usually called, is a plant that everybody can have, and so it is rarely seen in gardens, although there is no vine hardy in our climate which produces such beautiful and showy fruit or grows more rapidly and with less care.

In its native wilds Celastrus scandens climbs over rocks, bushes and trees, delighting in moist shady situations, and often sends its slender twining stems fifteen or twenty feet from the roots. The leaves are abundant, of good size, and of a lively green; the flowers are small, greenish yellow, partly perfect and partly unisexual on the same individual, so that every plant produces fruit. They are arranged in racemose clusters, which appear at the end of the young branches. In this arrangement of the flowers lies the chief advantage as an ornamental plant of the American over the Japanese species, which was figured some time ago in these columns (vol. iii., p. 550). In that species the flowers are arranged in sessile axillary umbels, and the fruit is completely hidden by the leaves until they fall, leaving the branches covered with the open capsules, which are smaller than those of Celastrus scandens. But in the case of the American plant, the inflorescence being racemose and terminal, the fruit-clusters, which are often from four to six inches long, stand up well over the leaves and make a great show for several weeks before and after the capsules open. In the late autumn the leaves turn clear bright yellow; and it is at this time that the climbing Bitter Sweet is more beautiful than in any other part of the year, as then the fruit displays its brightest colors and delights the eyes of every lover of nature by the brilliancy and harmony of its contrasting colors.

Celastrus scandens is an excellent plant for covering trellises, to ramble among strong-growing shrubs, or to drape walls and other unsightly objects. It is free-growing without being too rampant, and it is not at all particular about the character of the soil in which it is planted or about the exposure which is given to it. Seedlings are easy to raise, and it may be readily and quickly multiplied by layers.

Foreign Correspondence.

The London Chrysanthemum Exhibition.

ONE week of rain and another of yellow fog have been the unfavorable heralds and accompaniment of our great annual exhibition of Chrysanthemums. Still, bad though the weather has been and is, the flowers are, as a rule, first-rate, and the plants are equal to the best of previous years. Chrysanthemums are, after all, of the very best-tempered garden-flowers, and the conditions must be very bad indeed to cause them to fail. Exhibitions are now being held everywhere, even our smallest towns, and not a few villages, boasting an annual show of Chrysanthemums. The horticultural journals are consequently almost wholly given up to reports of them, and will continue to be so during nearly the whole of November.

Of course, the greatest of all these shows is that arranged by the National Chrysanthemum Society to take place at the Royal Aquarium, Westminster, in November. Here the prizes are valuable, and, as a consequence, the exhibits are from all parts of the country and of the best quality.

The cut flowers are this year, as before, the most sensational objects at this Chrysanthemum show, and, notwithstanding various efforts to break away from the practice,

the still generally adopted arrangement is on flat boards with holes in them for little flasks of water, each flower resting on its shoulders on the board. As a rule, the flowers, especially of the Japanese varieties, crowd each other. Bunches of flowers have been tried, but they do not please. It must be admitted that the Chrysanthemum as generally represented on the exhibition-stand is as wonderful as it is unnatural.

The most praiseworthy exhibit of flowers at the Aquarium was the first-prize collection of forty-eight large Japanese varieties, shown by Mr. W. H. Fowler, of Claremont. They were a grand lot, the size, form and finish of almost every flower being exceptional. As they represent the cream of the Japanese section, as shown in the various classes, I give their names: Aida, Avalanche, Baronne de Prailly, Boule d'Or, Carew Underwood, Coronet, Colonel W. B. Smith, Edwin Molyneux, Etoile de Lyon, Ethel Paule, Eynsford White, Florence Davis, Gloire de Rocher, Gloriosum, Hamlet, H. B. Ironside, Japonaise, Lord Brooke, L. B. Bird, L. Bœhmer, Madame Baco, Madame J. Laing, Mademoiselle M. Hoste, Miss A. Hartshorn, Monsieur Bernard, Monsieur Freeman, Mrs. A. Hardy, Mrs. E. A. Adams, Mrs. F. Jamieson, Mrs. J. S. Fogg, Mrs. A. H. Neve, Mr. D. B. Crane, Mr. E. Beckett, Mr. Williams, Puritan, Ralph Brocklebank, Ruth Cleveland, Stanstead White, Sunflower, Viviand Morel, W. W. Coles, W. Tricker, W. H. Lincoln

Fig. 97.—Celastrus scandens.—See page 568.

and three others of doubtful names. Other Japanese varieties besides the above, which figured in first-prize collections, were Belle Paule, Bertha Flight, Comm. Maraignon, Excelsior, Fair Maid of Guernsey, Madame C. Audiguier, Monsieur Astorg, Sarah Owen, Umpire and Val d'Andorre.

The first prize for six white flowers of a Japanese variety was awarded to a magnificent tray of Stanstead White, Avalanche being second and third. Six flowers of Viviand Morel won the first prize for a colored Japanese variety, the same variety being second, while Sunflower was third. Certificates were awarded to the following new Japanese varieties: Thrumpton (Tenard), a large dark bronzy red flower of good promise; Beauty of Exmouth (Godfrey), a glorified Florence Percy, which has already been awarded four first-class certificates. The flowers were fully six inches across, and pure white, the florets curiously curled as in the favorite F. Percy, which is one of the very best of the white-flowered kinds.

The incurved section was quite as well represented as the Japanese. The following kinds occurred in three or more first-prize collections: Empress of India, Golden Empress, Jeanne d'Arc, J. Lambert, Lord Alcester, Lord Wolseley, Miss M. A. Haggas, Miss V. Tomlin, Mrs. Heale, Mrs. S. Coleman, Princess of Teck, Princess of Wales, Queen of England. Three varieties, Miss V. Tomlin, Golden Empress of India and Mrs. S. Coleman, were included in no less than six first-prize collections. For six flowers of a white incurved variety Empress of India was a long way first, Princess of Wales being second. A new incurved called Robert Petfield (Owen) was awarded a first-class certificate, as well as the first prize for three flowers of one kind. It is not unlike Lord Wolseley in form and color, but paler. The large-flowered reflexed section was represented by Cullingfordi, Dr. Sharp, Chevalier Domage, Cloth of Gold, King of Crimsons, Pink Christine, Golden Christine and Peach Christine. These occurred in several first-prize collections.

The large Anemone-flowered division was abundantly represented, the best of them being Gladys Spaulding, Lady Margaret, Thorpe Junior, Cincinnati, Nouvelle Alviole and Fleur de Marie. The Anemone Pompons were shown in bunches, three sprays of each kind, not disbudded. The best of these did not seem to be first-rate, although the light in the building was so bad by the time I got to them that it is scarcely fair to express an opinion upon them.

The aquarium is roofed with "Duroline," a patent substitute for glass, and which is made of finely woven brass wire, thickly coated with a yellowish semi-transparent substance not unlike a thin layer of gutta-percha. It is durable, and allows a certain portion of light to pass through it, but the color of the flowers is affected by its yellow tint. This was most noticeable on Mr. Cannell's magnificent collection of flowers of Zonal Pelargoniums, which were of the most extraordinary colors as seen in the Aquarium, except when the gas was lighted. Duroline is a most useful invention, and I shall not be surprised to see it become of considerable service in horticulture, but as a roofing for buildings, in which flowers are grown or exhibited, it is not suitable.

Mr. Cannell's Pelargoniums were even better than any I have ever before seen from him. Immense trusses of large flowers, the petals thick and velvety, and the colors rich, as though they had been developed in July instead of under the influence of November fogs and bad light. I noted some of the best of them, and if any one wishes to have in November a rich harvest of most useful flowers I would recommend him to get a collection of these Pelargoniums, and, if possible, learn from Mr. Cannell or some other expert grower how they should be treated. The kinds I noted were Birthday, white, pale pink eye; Ethel Lewis, Beauty of Kent and Amphion, three beautiful soft pinks; Madame de Bourdeville, white, shaded and lined with salmon; Rev. E. Harries, large, vivid scarlet; Lady Brook, white, with a large eye and radiating lines of pink; White Lady, pure white; Stella Massey, flesh-pink; Mascargni, flesh-colored, with a salmon eye; Sunbeam, deep salmon-red; Swanley Gem, scarlet, with white eye. Mr. Cannell showed about a hundred bunches, each as large as a man's head, and they were tastefully arranged upon an irregular bed of wood moss, the dark green of which had considerable effect in heightening the colors of the flowers.

Fruit, vegetables, cut flowers and table-plants were all represented by very fine collections. Messrs. Suttons' prize competition for vegetables raised from seeds supplied by them produced a great display of gigantic well-grown carrots, cauliflowers, leeks, potatoes and everything else good and seasonable in the vegetable line. Such exhibitions serve the purpose of a grand advertisement and at the same time give the general public some idea of the perfection to which vegetables may be grown. Of course, we must always bear in mind that a good show-vegetable is not necessarily a first-rate one for the table.

In conclusion, I may say that the best of the new Chrysanthemums at the exhibition was, in my opinion, Beauty of Exmouth, and the most striking in the whole of the collections were E. Molyneux, Viviand Morel, the greenish Florence Davis, and Sunflower. Of course, all the Queen family of the incurved kinds were supreme as ever. Messrs. Pitcher & Manda's prize of £20 for the best seedling raised from the exhibitor's own seed was awarded to Mr. W. Gilbert for a Japanese seedling unnamed. Other certificated new kinds besides those already mentioned were Dorothy Shea (Shea), a cross between E. Molyneux and Sunset; Mr. C. Shrimpton (Shrimpton), a chestnut-red Japanese variety; Charles Blick (Blick), rich yellow, with broad petals; Rosy Morn (Carter & Co.), a Japanese rosy purple, large-flowered variety; Ed. Lonsdale (Pearson), crimson Japanese; Brookleigh Gem (Caute), a purplish sport from Jeanne d'Arc; La Deuil (Jukes), a Japanese Anemone, flowered variety, large, full, crimson-purple.

London. *W. Watson.*

Cultural Department.

Propagating New Strawberries.

OF all the occupations or pastimes of the horticulturist the originating of new varieties of Strawberries is one of the most fascinating. The method is so simple, and the result so speedy and apparent, that it never loses its charm. Besides, there is always a chance that something of real value will be produced.

With scarcely an exception all the kinds of any value now in use originated in the judicious crossing of different varieties, so as to unite as many good qualities and as few poor ones as possible in the same plant. Many had their origin at haphazard from the chance crossing of nature, but few have stood the test of time. The Hoffman was found growing in a hedge near Charleston, South Carolina, and it was a find of unusual value. While not perfection in itself, it may prove the variety from which the ideal berry of the future will be derived. It has size, color, firmness, and adaptiveness to different soils and climates in a marked degree; its extreme earliness is another valuable quality, and it needs only greater productiveness.

Varieties selected for crossing should have diverse merits, so that, if these merits are combined in a single seedling, this would have the greatest possible number of good qualities. This ideal berry will possess, in eminent degree, size, earliness, productiveness, flavor, attractiveness and firmness. The market gardener, as a rule, requires size, earliness, productiveness and attractiveness, and if he lives remote from market, also firmness, so that his berries will carry well. The amateur gardener above all desires flavor, with productiveness and size as close seconds, and with earliness and beauty not far behind. The Hoffman has good size and is early. In the Bubach, Sharpless and in other varieties flavor, or at least palatableness, as well as largeness and productiveness, are to be had. Possibly the long-sought berry may be an offspring of the Hoffman and Bubach, which possess, together, about every desirable quality.

To achieve this result my plan is to set a sufficient number of the pistillate Bubach plants in a Hoffman field where their blooms will be thoroughly impregnated by the pollen from

that staminate variety. If these operations are bounded by the limits of a garden, extreme care must be used to prevent the intrusion of undesirable pollen from other near-growing varieties. Nothing in nature is more subtle and penetrating than this impalpable dust. If other varieties than the two to be crossed stand within one hundred yards a sash should be used as a protection. This may be placed just before blooming-time over half a dozen plants each of the chosen kind set the autumn before. A camel's-hair brush is used by some propagators to convey the pollen from the staminate to the pistillate blossom, the plants being kept in pots.

The berries once well "set," all danger of further intermixing is past, and, of course, no other preventive measures need be taken to keep out other pollen. From thoroughly ripe berries borne by these plants the earliest and largest should be selected. After the pulp is expressed the seed should be sown in rich, well-prepared soil, and covered with fine earth about one-fourth of an inch deep. In watering, a sprinkler with a fine rose will prevent the washing up of the seed. Germination should begin in two or three weeks. When large enough to bear it, they should be transplanted, in wet weather, to good soil. With good soil and attention these plants will probably bear some berries the following spring, but nothing decisive should be expected until the second bearing season. Meanwhile, all runners should be clipped as fast as they appear.

The result of an experiment of this kind will be curious and interesting if it has no other value. While the berries of every plant will in some degree resemble one or both of the parents, no two will inherit exactly the same qualities or be precisely alike, and each will have its own distinctive qualities.

The desirable plants should be marked, or the undesirable ones may be destroyed. Those retained can now be allowed to produce runners at will, care being taken to prevent those from any two plants mingling, so that they cannot be distinguished. The runners from each separate original plant will bear the same kind of berries and constitute a new variety.

Kittrell, N. C. *O. W. Blacknall.*

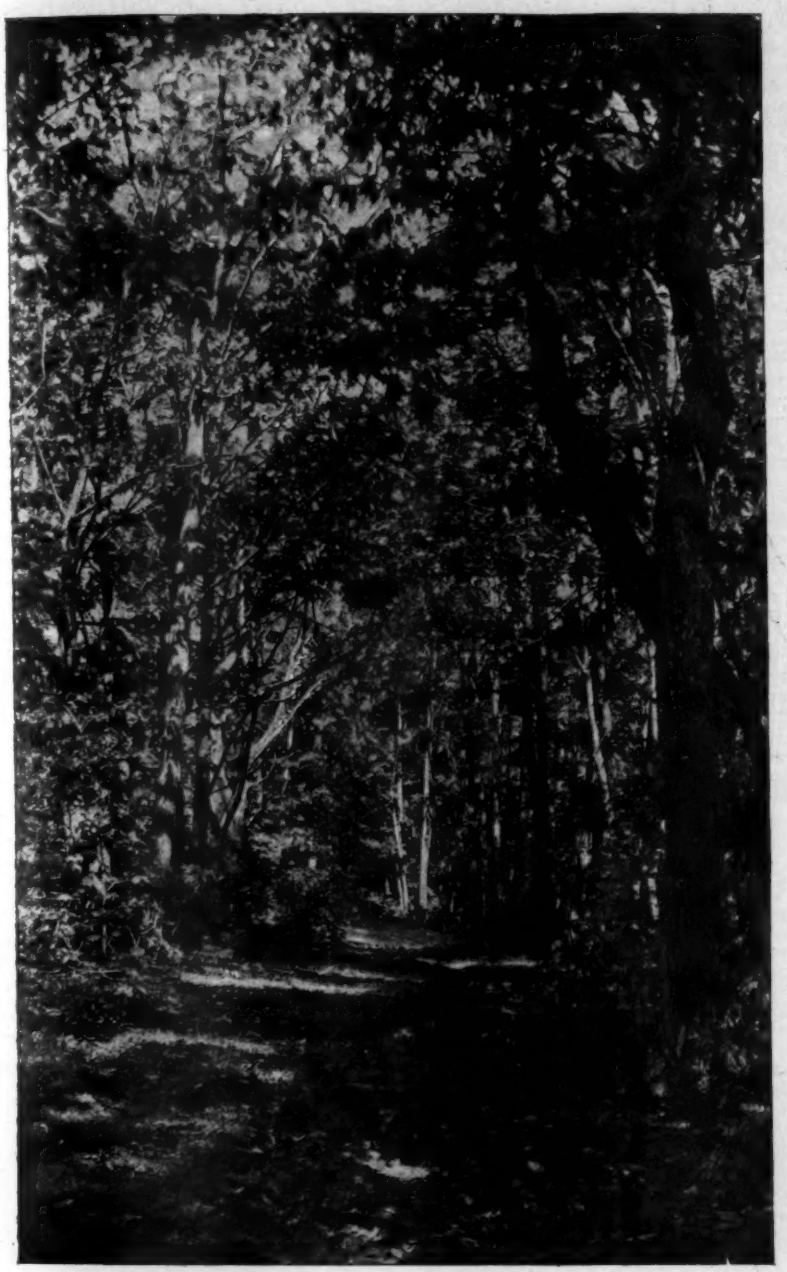

Fig. 98.—Road through a Chestnut Wood on Broad Top.—See page 566.

A few Notable Shrubs in late November.

THE Thursday of the last week of November is now generally looked upon as the Thanksgiving Day of the American people. In the south the frosts generally have not then caused any very great destruction of vegetation, and late autumn flowers may linger until Christmas. But in northern gardens, November frosts are usually frequent, and often very severe; and Thanksgiving Day brings with it few fresh flowers to be found in the open air. The Fall Dandelion (Leontodon autumnale), so common in our fields, is one of the most persistent plants in continuing to produce flowers in spite of frost, while Tansy and some others of the Composite family are more likely to maintain their freshness than any other class. Precocious flowers, not due until the following spring, are not very rare, and we sometimes find Dandelions in cultivated ground, Daphnes in our gardens, and, perhaps, Epigæa in our woods bearing a few stray flowers.

But it is the fruitage of certain shrubs which will attract most attention as autumn passes into winter, and probably the number of species available which possess this quality is not generally appreciated. Every one having any sense of color admires the abundant fruit of the common Barberry, which now grows so commonly along many waysides. But there are other species of Barberry, as yet unknown to the majority of gardens, which surpass our common kinds in the lasting beauty of their fruit. By far the best of these is the Asiatic Berberis Thunbergii, the bright red berries of which, being comparatively dry and juiceless, remain in perfect condition all winter, while the juicy fruit of the common Barberry becomes shriveled by frequent freezings and soon loses color and lustre.

For brilliant red color we have our native deciduous Hollies, or Black Alders, or Winterberries as they are also called. These thrive as well under cultivation as the Barberries, and may be taken directly from their native haunts and planted in the shrubbery if necessary. As they are dicœcious—the male and female flowers being produced on separate plants—it is necessary that care should be taken to select fruiting plants in order to secure a crop of the showy berries. There does

not appear to be any great difference in the size and ornamental quality of the fruit of the common Winterberry (Ilex verticillata) and the smooth one, Ilex lævigata, but the berries of the former are usually more abundant, they ripen later, and they persist longer in a bright and showy condition. These and the Barberries might furnish enough of the bright reds in any group, but they may be augmented by still others of similar colors. Besides one or two more southern species with red or scarlet fruit which prove hardy in our northern gardens, there has been introduced to the Arnold Arboretum a Japanese species which is quite ornamental after the leaves have fallen, which they do early. This was received without a name some years ago from the Flushing nurseries of Messrs. Parsons, and from descriptions it appears to be the Ilex Sieboldii of Miguel. The fruit is much smaller than that of our native species, but is produced in abundance on slender branches and twigs. A peculiarity of these fruit-bearing twigs is that two of them are often produced from the axil of a leaf, one being superposed immediately above the other. This gives the shrub a particularly twiggy aspect. In striking contrast to the normal red or scarlet of the fruit of these different Winterberries is a clear, bright yellow-fruited form of Ilex verticillata, which was found some years ago near Andover, Massachusetts. It bears fruit in abundance and is singularly showy at this season.

The Burning-bushes, or species of Evonymus, are better known than most shrubs which are valuable for late autumn effects in color; but the closely allied Bittersweets or Celastrus are not often seen except where they grow wild. The native species, Celastrus scandens, with its deep orange pods and scarlet arils, is unlike any other species in cultivation, and in some respects is better than its Japanese congeners. As it is dicœcious, care should be taken to procure stock by division from fruiting plants, for if the plant should be a staminate one it might grow rampantly and blossom, but would produce no fruit. The best known of the Japanese species is probably Celastrus articulata, which has much smaller berries than C. scandens, with yellow instead of orange-colored pods. It makes an excellent covering over rough places and rocks, as it is of rather rank free growth.

Roses of various species sometimes have fruit of quite an ornamental quality at this late season, and the hips of R. Carolina may be taken as an example. The Cotoneasters are a group of shrubs almost unknown in American gardens, probably because they are not conspicuous for flowers. The fruit of such species as C. vulgaris and C. acuminata remains of a rich purplish or reddish color after the leaves have fallen; while C. Simoni, still holding some of its foliage, has fruit almost scarlet in color. The purplish red fruit of the Chokeberry (Pyrus arbutifolia) is fresh enough to be ornamental; and although the large yellow Japanese Quinces have fallen, they perfume the air on a mild day if they have not already been gathered for making jelly, as they can be converted into a fairly good table dish.

The high-bush Cranberry (Viburnum opulus), too, is not to be overlooked, and, besides the brilliancy of its bright red fruit, it may also serve a useful end as a sauce in regions where the true Cranberries will not grow. The Coralberry, or Indian Currant (Symphoricarpus vulgaris), which is as common as a weed in some places, is deserving of recognition on account of its slender branches being laden with the small dark red or magenta-colored berries, in striking contrast with the large snow-white fruit of the allied Snowberry (S. racemosus), which usually does not keep its fruit so late into the winter. For a shining black fruit the Common Privet is unexcelled; and the large egg-shaped scarlet berries of the so-called Chinese Matrimony Vine (Lycium Chinense), hanging thickly on the long string-like stems, are a surprise and delight to every one who sees them for the first time.

Arnold Arboretum. *J. G. Jack.*

Orchid Notes.

THE genus Dendrobium is so extensive that there are always some of its representatives in flower. D. chrysanthum, the golden Dendrobium, is just fading, after having been in bloom for the past six weeks. The pseudo-bulbs of this plant are long, pendulous and of medium thickness, and the flowers are produced with the leaves on those of recent formation. These are oblong-lanceolate, from four to five inches long, and of bright green color; and the deep yellow flowers, with dark brownish blotch at the base of the lip, are two inches across, borne on pedicels two or three inches long and in clusters of two or three at the nodes of the pseudo-bulbs. This species has two distinct flowering seasons, autumn and early spring, and it requires a warm-stove temperature. It should have about three weeks of complete rest after flowering, and then, with heat and moisture, it will start into vigorous growth.

Dendrobium formosum is a remarkably handsome plant, now flowering freely. The stout pseudo-bulbs are well clad with deep green oblong leaves, bearing the large blossoms in dense racemose clusters of three or four at the apex. The flowers are from four to five inches in diameter, pure white, with a large irregular patch of deep orange-yellow on the spreading lip. This plant is, reputedly, difficult to manage, but its conduct here is quite satisfactory. It is rested moderately after flowering—that is, it is placed in a minimum temperature of fifty-five degrees, Fahrenheit, and kept sufficiently moist at the roots to prevent the leaves from shriveling. The plant is fully exposed to light and sunshine, and the surrounding atmosphere is kept as dry as possible. It is turned out of the basket in spring, and replanted with fresh rough peat, charcoal and sphagnum about the roots. Then it is placed close to the glass in a house where the average temperature is seventy degrees and the air is continually laden with moisture. This is maintained, with frequent applications of water, and shading from bright sunshine, until the new growth is completed, when the plant is again subjected to the cooler treatment until the flower-buds are well advanced. It is then given a slightly warmer place for the flowers to develop.

The flowers of Cœlogyne fimbriata are pretty, though not very showy. The plant is rare in gardens, but well worth cultivation, as it is ever green and fresh in appearance, and always blooms freely late in autumn. The racemes emerge from the apex of the pseudo-bulbs, and they are slightly shorter than the leaves. The peduncle bears three or four flowers about an inch in diameter, developed in quick succession from the base upward. The sepals are ovate-lanceolate, the petals linear, and both of a yellowish green color. The trilobed labellum is very beautiful. The lateral lobes are erect, the front one spreading and prettily fringed. The ground color is a trifle paler than the other divisions, and there are many prominent lines and patches of rich velvety brown on the upper surface. The blunt, curved column is bright yellow at the tip, thus completing a combination of color that would be called highly pleasing were the picture magnified a few times. The freedom with which the flowers are produced compensates for the deficiency in size. C. fimbriata is easy to grow, and thrives luxuriantly in a well-drained pot or pan, with peat-fibre and sphagnum about the roots. The sphagnum should always be kept moist. An intermediate temperature gives the best results.

Cambridge, Mass. *M. Barker.*

Basket-plants for Window Culture.

THE cultivation of basket-plants in living-rooms is necessarily somewhat limited, from the fact that many species that show to advantage under this method of culture are not best suited in the dry atmosphere of a dwelling, for the soil in a basket will naturally dry out under such circumstances much more rapidly than pot-grown specimens, and in all cases the plants so grown, if in good health, will be found to require thorough watering frequently, the most satisfactory method being that of dipping the entire basket in a tub of water, and then allowing it to drain off in a sink or other convenient place before returning it to the window garden. There are, however, a number of species that will thrive under all these disadvantages, and prominent among them is Othonna crassifolia, a pretty little composite with bright yellow star-like flowers about half an inch in diameter. This is quite a rapid grower when placed in a sunny window, and soon covers a basket with a screen of its slender shoots, which are clothed with bright green leaves of very succulent character. It is readily propagated by cuttings, and it has the good quality of not being easily discouraged by slight neglect, and overwatering is more detrimental to it than an undersupply.

The Variegated Ground Ivy (Nepeta Glechoma variegata) is also a very useful subject for our purpose, and, though a common plant, it is one of real beauty, its small, kidney-shaped leaves being prettily variegated with white, while its growth is profuse under reasonably good conditions. This, also, is easily increased by cuttings, and, besides, being a good basket-plant, the Nepeta can be used to advantage for carpeting the surface of a window-box or for covering the soil around a large pot specimen—for instance, a large Palm or other decorative plant.

Fuchsia procumbens is another pretty little plant for house-culture, and of rather different type from the general idea of Fuchsias, being a trailing plant with small roundish leaves and erect tubular flowers, which are rather insignificant in size and yellow and blue in color. The flowers are succeeded by crim-

son berries, which remain on the plant for a considerable time, and add much to its decorative value. F. procumbens is a cool-house subject, and can, therefore, be grown in some windows in which more tender plants would suffer from the low temperature.

The Ivy-leaved Pelargoniums are also admirable plants for window-decoration, combining beauty of leaf and flower. Marked improvement has been made in the later introductions among this charming group. Among the older varieties L'Elegante still holds its own as a handsome variegated-leaved sort; in fact, it is doubtful if there is a finer-foliaged variety in cultivation, its combinations of white and pink found in the variety being most attractive. The chief improvement aimed at in the newer varieties has been in the flower, and much has been attained, both in single and double flowers, the foliage in most cases being bright green, and more or less marked with a bronzy zone.

It is scarcely necessary to note the value of German Ivy (Senecio mikanioides), the Tradescantias and Saxifraga sarmentosa for the purpose in view, their merits being already so well recognized for basket-plants, while their propagation is also well understood by all plant-lovers. Some Ferns can also be grown in window-baskets with success, two of the best for the purpose being Nephrolepis exaltata and N. davallioides furcans. Both are strong growers and withstand the dry atmosphere of a dwelling quite well, providing their roots are not allowed to get dry. They belong to the Sword Ferns, and have long, graceful pinnate leaves, often four feet long in large specimens, and as these plants send out stolons or runners, somewhat like a Strawberry, it is not difficult to increase them.

Holmesburg, Pa. *W. H. Taplin.*

Chrysanthemums Naturally Grown.

NOW that severe weather has blighted the last of the flowers in the border it may be well to say something about the Chrysanthemum in the garden. The seasonable notes in the horticultural press mostly give only one phase of Chrysanthemum culture, that under glass, and generally the cultural directions are only meant to aid in the production of the largest possible flowers. From one point of view this is entirely satisfactory, but the owners of spare glass are few, and there are those to whom mammoth flowers are not all-satisfying. With the keenest appreciation of the best efforts of the cup-hunter, one feels, after visiting the various growers, that the matter becomes somewhat tiresome. Every one grows them on the same plan with not largely differing results, and to see one lot is to see them all. With all the variety in the houses of the grower of large flowers one could never gain an idea as to the abounding wealth of form and variety to be found in the family.

To one who loves a garden with all the flowers of the various seasons, the Chrysanthemums are indispensable for the ending of the floral year. There are no plants which, for the same care and attention, will give a more satisfactory and abundant harvest. They may be flowered in the garden in this latitude with temporary shelter, which may be arranged at slight expense, a necessity which they well repay. For some years I have so grown them, protecting them sometimes under sash, and sometimes under a tent. Hot-bed sash on a temporary frame are the most satisfactory, as a tent is a difficult subject to anchor and cools off too rapidly under a high wind. It is scarcely possible to secure exhibition flowers under such conditions, but one can easily obtain really fine blooms, and quite as large ones as are useful. Flowers so grown are mostly lacking in depth, which is only obtainable by culture where all the conditions can be controlled, with manuring, watering and like processes carried on without regard to conditions of outside temperature. Where they are partially exposed, there will, of course, be days when these attentions could not be given safely, and the plants have to be kept generally on the side of dryness after the middle of October. Flowers grown under these conditions, freely exposed to the air when the temperature is above the freezing point, though protected at all times from high winds, are to me the most satisfactory and enjoyable, as they seem entirely in character. After roughing it for about a decade with Chrysanthemums in the garden, those under glass seem to me about as tame as a deer in a paddock. There are many flowers which please me as well as the Chrysanthemum, but none which so excite or exhilarate me as these in a bright frosty October day. Under such conditions, with the beautiful forms, the wealth of color and the faint odor, they are fairly intoxicating. This is not an effect singular to myself, as I have noticed after some experience with visitors. A few years ago, when my collection attracted some local interest, it first amused, and then puzzled, me to see very frequently rather indifferent visitors to the Chrysanthemum shows become enthusiastic over my flowers, which were only mediocre ones in comparison.

The explanation was simply that here they felt and were stirred by the real spirit of the flowers under their natural conditions.

For out-of-door culture the grower will find that some care will be necessary in selecting his varieties, those with not too thick a petal being the most desirable. Varieties with meaty florets are quickly ruined by a light frost, and in many of the modern varieties, favorites with the growers of lasting blooms are of this character. Otherwise one can scarcely go amiss in selecting according to favorite colors or types.

Elizabeth, N. J. *J. N. Gerard.*

Sonerila Hendersoni.—The dwarf, compact habit and pretty foliage of this plant renders it very useful and telling in the outer line of a group of larger plants or along the margins of our stove stages. It first came into notice early in the seventies, and was at once stamped a popular favorite. In habit it is branching to an extreme degree, and the height seldom exceeds six inches, being often less than that. The ovate, opposite leaves, with short petiole, are from three to four inches in length, and closely arranged on reddish stems. The underside is light green, freely marbled with reddish purple, and the upper surface rich dark green, suffused and dotted with silvery white, the spots being more distinct in the older leaves. The plant has an additional charm in the beautiful flowers, which are produced in large numbers during the autumn months. They are borne in three or four-flowered umbels at the extremity of the stems, thus having a most effective setting in the pleasing foliage. The peduncles are from one to two inches and the pedicels one-fourth of an inch in length, and the three-parted corolla, with oblong divisions, is of a deep pink color, and an inch and a half wide, the showy yellow stamens being arranged in a cluster in the centre.

Sonerila Hendersoni is extremely easy to cultivate. It is most ornamental and serviceable when grown in pans three inches deep and six inches across at the top. These should be well drained, and filled to within half an inch of the rim with a mixture of loam, peat, leaf-mold and sand, in equal parts. The soil should be pressed down firmly and covered with a light coat of sharp sand. In this cuttings should be inserted early in spring, placing them about two inches apart. The pans may then be stood in a close propagating-frame, where the cuttings will strike root in a short time. When the plants have fairly started into growth, they may be at once removed to the stove-stages. An average temperature of sixty degrees insures healthy development, and the plant likes a moist atmosphere and a position near the glass, with shade from brilliant sunshine in summer. The statements regarding the origin of S. Hendersoni are contradictory. Some authorities say it is a garden hybrid, while others class it as a variety of S. margaritacea, introduced from the East Indies in 1875.

Cambridge, Mass. *B.*

Correspondence.

About Irises.

To the Editor of GARDEN AND FOREST:

Sir,—It has seemed to me that the Iris is a flower of such variety and beauty, of such hardiness and ease of cultivation, of such value in a formal garden or in wild plantations, as to rank but little below the Rose in its interest to amateurs, yet, so far as I am aware, there is no good comprehensive treatise on the genus, while Rose-gardeners may select their books of instruction from a long list. I have thought that a comprehensive treatise ought to be prepared for American growers of the Iris, which should give specific information in regard to the treatment of the separate varieties, and should be in such a form as to make a pamphlet or small book when gathered together.

Some days since I was talking to a prominent amateur about the advantages of the Iris, and he said to me, "What a pity that their season is so short." But we can cut the superb blooms of the Mourning Iris in May, and those of the Kæmpfers and others until August; there must be a way of so choosing and planting our varieties as to give us flowers for nine or ten weeks. We may not be able to get a continued succession of blooms in the same location, on account of the different treatment demanded by different species, but we

should be able to supply our houses with the exquisite flowers for at least two months. Those who have only seen the Iris in a formal garden, or even in a mixed border, can form no idea of its value and beauty in the wild garden when it thrusts up its bloom on the bank of some quiet pond, to be reflected in the clear water, or mingles its flag-like foliage and exquisite flower-colors with the rank growth of a swampy nook.

All who have grown Irises have felt the want of reliable information. Those who have not should have their attention drawn to a source of horticultural pleasure about which it would be difficult to say too much.

Westbrook, L. I. *C. B. W.*

[The desire here expressed for information as to this interesting family of plants is likely to be soon gratified to some extent by the publication of a handbook of the Irideæ, by Mr. J. G. Baker, which we believe is now in the press. Such a handbook has long been much wanted. Information as to the Iris has been hitherto found mostly in the form of monographs or notes in the horticultural papers, or in "the proceedings of societies," or, in a scientific way, in the encyclopedias. The letter of our correspondent emphasizes the fact that in gardens usually the only Irises known or grown are the hybrids or so-called German, the Japanese, and possibly sometimes the English and Spanish. This is in spite of the fact that these plants have always been special favorites with the lovers of hardy plants, in whose gardens the Iris occupies the place corresponding to that occupied by the Orchids in collections grown under glass. While the Irises are not exhibition flowers and not adapted to making a stir among those who esteem flowers according to their exhibition value, the possessor of a good collection from the hundreds of species of the genus finds them perennially fascinating, usually a feast to the eyes, often of great interest botanically, and very frequently most difficult subjects to flower successfully. Our readers will recall the fact that we have given much space to these flowers; that we have noted the flowering of numerous varieties; have kept up a current history of the Iris season from February till late summer, after which there is a dearth of bloom outside till Iris stylosa puts out its flowers in early winter. Numerous Irises are not hardy here, but in the cool house the season can be continued till frost again slightly loosens its hold. One who is fond of plants or flowers which will ornament his garden in all seasons, and who yet wishes mental recreation in collecting and studying variations of species, will find in the Iris an abundant and interesting occupation which seems practically limitless, as new species are constantly being discovered. The genus, too, offers an almost untrodden field for the hybridizer, as work of this sort has as yet been attempted with very few of the species.—Ed.]

Dolichos Japonicus.

To the Editor of Garden and Forest:

Sir,—The article in your issue of October 26th on Aristolochia Sipho leads me to say that I have found Dolichos Japonicus a more satisfactory vine for trellis or wall or brush-heap, since it is a more rapid grower and the leaves have a remarkable beauty in their shades of green. I have had it in different locations during five years past, and the only trouble has been that it has outgrown all accommodations provided for it, running rampant and throwing out in all directions its feelers or tentacles, for it almost seems to have animal intelligence, to embrace and cover everything within its long reach. Three vines now cover the tower of my house, running up over forty-five feet. By fixing a point of departure this vine could be fairly seen to grow, as an hour-hand on a watch can be seen to move by careful watching. Some days showed over thirteen inches of new growth! These vines were on the corner, where they are simply to run around a balcony at the first floor. It is not a good "architectural" vine for fronts of houses, but this year I gave it rope up to the loggia, and it was not satisfied with that, and would, I think, have romped clear over the top of the tower-roof if it could have got a leader up over the eaves. The blossoms of this Bean are purple and lavender, but show only from inside; and, by the way, the inside is, without question, the most desirable place to enjoy the vine, as the light coming through the leaves brings out the delightful greens of the foliage. A rear piazza, therefore, covered with it would become a well-protected light green bower.

Hartford, Conn. *A. H. Olmsted.*

[This plant was one of the introductions of Thomas Hogg, which has been sent out by nurserymen under the name of Dolichos Japonicus, a name which was once applied to Wistaria Chinensis. The plant is, without doubt, Pueraria Thunbergiana, an Asiatic twiner of very rank growth. In New England it rarely flowers, and, unless well protected, the stems die to the ground in winter. In milder regions they would survive, since they are distinctly woody, though soft and pliant. Mr. Thomas Meehan writes that his plants in Germantown formerly died to the ground, but within the last few years some ten or twelve feet of the vine have survived the winter. The plant was at one time called Pachyrhiza Thunbergiana, and it has had several other synonyms.—Ed.]

Wood Roads on Cape Cod.

To the Editor of Garden and Forest:

Sir,—The following words, which occur in Professor Shaler's article called "The Betterment of Our Highways," printed in the October *Atlantic*, are of special interest to us dwellers near Cape Cod. "Many of the worst roads in this country," he says, "are brought into their abject state by an unreasonable interference with natural processes—an interference which arises from an ignorant prepossession that all roads should have the same general aspect. Thus, in sandy regions, such as those in south-eastern Massachusetts, and in many other districts near the southern margin of the area occupied by the ice during the last glacial period, the first wagon-roads belonged to the class which we may call trackways, in which the path was just wide enough for a single vehicle, with occasional turn-outs to permit wagons to pass each other. On these trackways a single pair of parallel ruts were quickly formed, the growth of bushes and low forest-trees pressing so close to the roadway as to form a wall of foliage on either side. In many cases the crease made by the hubs of the wagons could be distinctly traced in the thick-set vegetation. Roads of this description afforded excellent wheeling and were maintained almost without cost. The falling leaves and small branches were swept into the ruts, and there mingled with the sand, forming a compact and elastic foundation for the wheels. The sandy soil permitted the rain-water quickly to drain away, so that no gutters were required. Although an unreasoning desire for improvement has led to the widening of almost all these old-fashioned trackways, we may here and there find bits which have escaped the merciless hand of the uneducated road-master. The present writer is accustomed frequently to pass over a stretch of road which was originally all of this nature; but a part of it has been altered to the regulation width of forty feet, while another portion remains in its primitive state. On the improved road the constantly shifting sands are not readily to be passed over by a pair of swift horses drawing a light wagon at a greater rate than six miles an hour. On the more ancient and natural type of way it is easy to attain twice that speed."

If Professor Shaler will come to the shores of Buzzard's Bay next summer, I shall be delighted to show him miles upon miles of these old-fashioned wood-roads, untouched by improvement, and unprovided even with turning-out places, the rather wide spacing of the trees in most places permitting one's infrequent opponents (I do not know what other word to use) to turn out comfortably enough into the low growth of bushes. I put the matter in this way, as a deserved tribute to the chivalry of the farmers of this region, for I have very rarely found that, when they saw a lady driving toward them, they were willing to lay even half the task of turning-out upon her.

There are, I say, very many miles of these roads in this neighborhood, running in all sorts of criss-cross directions between the greater and the lesser highways. As each stretch usually serves only one or two retired farms, which produce little but poultry, market-produce, hay or firewood, there seems little danger of their immediate "improvement." But some are more important and therefore more in danger, and so I offer my little appeal for them as a postscript to Professor Shaler's more influential one. These roads with their three ruts, one worn by the horse and two by the wheels, often with tall grasses and flowers growing between them, afford far better "wheeling" than most parts of our highways. "The

roads here are so poor that I don't care much about driving," says many a new-comer. "They seem so to you," we old-timers reply, "because you probably keep to the highways." "Of course," is the answer, "the less important roads must be even worse." In a city man this reasoning is natural; but it is greatly mistaken. Many of our woodland roads are quite delightful to drive upon; and taken altogether they are better than are our high-roads as a whole, although here and there, near the towns, we have some good solid bits of highway to show. Only, if Professor Shaler comes to try them, he must be content with my one-horse buggy. He must not bring his own pair of trotters. For— as I think I have already told the readers of GARDEN AND FOREST—our wood-roads have their three ruts very clearly defined by the passage of vehicles, mostly belonging to small farmers. A pair of horses can traverse them without great discomfort; but they are meant for a single steed; and the pair is apt to do much damage to the pretty alternating ribbons of grass, Golden-rod and Aster! And, as Professor Shaler knows, our axles are eight inches wider than the axles of Boston Town; so that, in his own carriage, he could profit by only one of our three comfortable shallow ruts.

Marion, Mass. *M. G. Van Rensselaer.*

The Niagara Reservation.

To the Editor of GARDEN AND FOREST:

Sir,—The botanist who visits Niagara Falls is constantly attracted away from the striking features of the river and cataract to admire the remarkable development and variety of the plant-life that is everywhere manifest. Especially is this true on Goat Island, which is now one of the few spots in this vicinity that are covered with primeval growth. It is probable that even here the earlier timber has been removed, for that which remains is not very large, but the absence of stumps shows that no cutting of trees has taken place for a long time. The timber is chiefly of the ordinary hard-wood trees, Beach and Maple predominating, with an occasional Oak, Ash or Tulip-tree, and near the paths many small Cedars, white and red, Hemlock and prostrate Yew-bushes.

The long period of neglect which preceded the erection of the Falls into a state reservation was favorable to wild growth, and it is the avowed plan of the present management not to "improve" the locality more than the necessities of travel require, still there is evidence this year more than ever before that the gardener is at work here and there, and may sometime enter upon a warfare against the wonderful wild growth of Goat Island. It is at the close of a fall like this one that the region is most attractive. Up to the last week in October not a leaf had been touched with frost. Though not so brilliant in hue as autumn leaves become under frost, the yellow hues were everywhere, and in great variety, while the Sumachs, which form a grove on the south-east of the island that is striking at any season, do not wait for frost, and produce reds and yellows that are fairly flaming.

It may be said almost literally that no wild plant known hereabout is lacking to the flora of Goat Island, and especially is this true of plants of the more wayward and vagrant tendencies. In few other places does the Wild Grape climb so high or spread so far or swell itself into such tree-like proportions. Nowhere, especially on the American side and in the vicinity of Luna Island, is the visitor out of sight of these rampant vines. The slope leading down to Luna Island is covered with small trees so overgrown by vines that one wonders how the trees can grow at all, yet they appear to thrive under the load.

If the Grape-vines are without fruit this fall, it is not the case with other wild plants on Goat Island. The Virginia Creeper, Bitter Sweet, Waahoo and Barberry are purple, yellow and scarlet with berries, and grow as though this were their chosen home of all the earth. The Barberry here, especially, illustrates the tendency of certain plants to keep away from cultivation. By far the finest specimen on the island hangs so far below the Luna Island stair-landing that it is unsafe to try to gather the rich clusters of scarlet berries, while a bush on the roadway that has been planted and given some cultivation is far less vigorous and seldom bears more than one or two berries on a single stem. The largest Bitter Sweet clusters hang far over the western bank, growing in very indifferent soil, and the Waahoo is best content where left entirely to itself.

Goat Island contains a deep and mostly rich soil, which most of the other islands do not, and it will always retain its remarkable flora if the state officials will let it alone. Their terracing operations in the vicinity of the cottage near the entrance of the island, and the thinning out of the trees between Luna Island and the Biddle Staircase, look extremely ominous. If they go much farther, it will be time for the lovers of nature to cry out. Already the erection this year of a monster pile of brick work, the first of many factories that the great tunnel must attract if it succeeds, presages the day when the town, even now rapidly growing under the new inspiration, is to be a manufacturing centre, with Goat Island for its chief breathing-place, so that the town, as well as the world at large, will be greatly the loser if the island is robbed of a single one of its distinctive natural attractions.

Buffalo, N. Y. *John Chamberlin.*

Periodical Literature.

In the current quarterly number of the *Journal of American Folk-lore*, Dr. D. G. Brinton gives his recollections of a childhood spent in the southern portion of Chester County, a few miles north of "Mason and Dixon's Line," the time being about forty years ago. It was a region of large farms, cultivated by negroes, many of whom had come from the adjacent slave states, the white population being almost entirely American-born, and the general intelligence being above the average in the state, owing to the interest in popular education taken by the original settlers, who belonged to the Society of Friends. Much of the folk-lore of the region, says Mr. Brinton, could be traced to the negroes, but some of it had other sources. "Thus many of the farmers observed the phases of the moon in the planting and sowing of crops, in felling timber, in cutting weeds, in the renewal of their live stock, in the preparation of the soil, and in the killing and curing of meat for food." There can scarcely be a doubt, he explains, that these superstitions "descend directly from that remote period when the moon was the goddess of moisture, the field, the growing crops and reproduction in general. Just such superstitions prevail in France, and the eminent Arago thought it worth while to direct a treatise against them. Many of the superstitions which Grimm narrates as occurring among the Scotch and north Germans, were familiar beliefs. . . . If it was desired to extirpate weeds and briers so that they should not sprout again, they must be cut down in the wane of the moon. For some allied notion it was the custom to cut trees for use as firewood in the wane of the moon, as the timber cured more soundly and was less apt to become soggy and sputtery. The latter is also a Scotch superstition, as there is a Lowland agricultural maxim, 'Cut wood when the moon is wadel,' the word 'wadel' meaning disappearing, diminishing or waning. Jacob Grimm, in his *Teutonic Mythology*, after bringing forward a mass of kindred superstitions, offers the general theory that, in folk-lore, operations requiring severance, dissolution, cutting down or removing from, promise best results if conducted in the wane of the moon; while those of an opposite character are appropriate to the new moon." Thus planting operations are best performed while the moon is waxing; but, in his natal region, says Dr. Brinton, "by some it was held that the sign varied with the nature of the crop to be planted. Root crops, such as Turnips, Potatoes, Carrots, and the like, which ripen their edible portions beneath the soil, should be planted in the wane of the moon, or, as the local expression was, in the 'sinking' sign, in contradistinction to the 'rising' signs, which were those of the increasing orb. Even such a matter as fence-building should be carried on with due respect to these potent influences. A fence should be constructed in the 'rising' signs, for if the posts be planted and the corner-stones which support the rails in a worm-fence be located in the 'sinking' signs, the former will rot more readily, and the latter will sink into the ground and allow the bottom rails to decay."

The community in which Dr. Brinton was brought up was by no means peculiar in this respect, for these same superstitions were prevalent in all the middle states, at least. In one agricultural community with which we are familiar, not fifty miles from this city, all the farm operations were made to conform with the supposed influence of the various phases of the moon, or, rather, of these phases in connection with the signs of the zodiac, so that the almanac was the ultimate authority in almost all matters of farm practice. Not only was it supposed that rail-fences were to be constructed at certain periods of the lunar month, but no one laid a stone wall in the "new of the moon," through the apprehension that the frost would heave it, and it was a matter of universal belief that if Lima or Pole Beans of any kind were planted in the "old of the moon" they would never climb or fasten themselves to the supports provided, but settle down in a tangled mass on the ground.

Notes.

There must be still a good many woodsmen at work in the forests of Michigan, since from Menominee alone 600,000,000 feet of lumber have been shipped this year.

About $40,000,000 is paid every year in Germany for the creation and preservation of forests; 200,000 families are supported from them, while something like 3,000,000 find employment in the various wood industries of the empire. The total revenue from the forests amounts to $14,500,000, and the current expenses are $8,500,000.

Monsieur H. Correvon, Director of the Alpine Garden of Acclimatization at Geneva, who is doing so much to rescue Alpine plants from extinction, has issued the prospectus of a monograph on hardy Orchids. The work will be illustrated by numerous engravings and will be furnished at the low price of three and a half francs.

Last week we spoke of a new Chrysanthemum which received the prize as the best pink at the Philadelphia show under the name of Magnet. This name has already been given to one of Mr. W. K. Harris's seedlings, which was distributed by H. Waterer, and the new Chrysanthemum has therefore been named J. J. Cliffe.

The agricultural experiment stations of the various states published last year, in addition to their annual reports, 225 bulletins, which were mailed to 340,000 addresses. In this way 35,000,000 pages of reading-matter were distributed among the people of the country, and a great part of the same matter was still more widely spread by the newspapers which quoted it.

A touching old rural custom still prevails in the western parts of France during the harvest-season. On the edge of a field bordering the highway a sheaf of grain is left standing, to which all the peasants of the village contribute, and which is called "the stranger's sheaf," as it is the property of the first tramp or other homeless wayfarer who may care to carry it away and profit by its price.

One of the famous White Oaks of New Jersey stands in the Presbyterian churchyard at Basking Ridge. It measures fourteen feet four inches in circumference at five feet high, while the branches shade a circle 115 feet in diameter. It has been a famous tree for more than a century, and it was, no doubt, a noble specimen in 1730, when the log-church was built on the ground where the present one now stands.

Professor B. D. Halsted, of the New Jersey Agricultural College, has prepared samples of the seeds of one hundred species of American weeds in metal-capped vials, which are arranged in four rows of twenty-five each in a tray, each vial in its own pocket and with a printed label. On the inside of the tray is a label giving a list of the hundred weeds with their botanical and common names in the order of the families to which they belong. The usefulness of such a set of seeds ought to be evident, since by means of it the foul seed in commerce can be readily identified. The sets were particularly made up for experiment stations and seedsmen, and one of them is sold complete for $10.00.

The oldest horticultural association in Europe is the Royal Society of Agriculture and Botany of Ghent, established in the year 1808. Its annual exhibitions are always of great interest, and every five years it holds international exhibitions, the thirteenth of which is announced to open on the 16th of April next and to close on the 23d of the same month. No less than 660 classes of exhibits have been determined upon, associated in twenty-six great groups; and the prizes will be of unusual value, chief among them being the Queen of Belgium's prize, a large gold medal, for "twenty-five different species of hothouse plants in flower," and the King of Belgium's prize, a similar medal, for "the most varied and meritorious collection of 100 exotic Orchids."

Monsieur Ledain, the director of an agricultural school in Brittany, has asserted that moles may be poisoned by means of live earthworms which have been sprinkled with nux vomica. The worms, he says, should be collected and left in peace for twenty-four hours to disgorge the earth they have swallowed. Then they should be put in a jar and sprinkled with the drug in the proportion of thirty grains to a saucerful of worms. Twelve hours later they will be ready for use; and then they should not be touched with the fingers, but taken up with little wooden pincers and put at the entrance of the mole-galleries, being covered with clods or bits of tile in order that the mole may not be alarmed either by a current of air or a ray of light.

The Proceedings of the Convention of the Society of American Florists last year, at Washington, have been published in an instructive pamphlet of 170 pages, of which about fifty are taken up with a review of new plants. The plants mentioned are by no means new, many of them, indeed, having been well known for a long time. The value of the review lies in the fact that it is made up of contributions from several different men, each one of whom gives a list of the class of plants with which he is familiar. Each one, too, has named such plants as seemed to him worthy of mention, together with brief descriptions. Of course, these descriptions vary in merit and the lists vary in range, so that there is little unity in the review. Although it is not so valuable as it would have been if it had been edited or compiled by a single person, and upon a definite plan, it is yet very interesting and has considerable permanent value.

An English horticultural journal recently recommended, as a novel manner of ornamenting dinner-tables, that branchlets of Birch should be thoroughly wetted and then whitened by being thickly sprinkled with flour, that these should be grouped in a central pot, and that flowers treated in a similar way should be dispersed about on the table. *Le Jardin* and another French journal have quoted this advice with approval, saying that such snowy decoration must produce a very cool and pleasant effect, especially in hot weather. But to an unsophisticated transatlantic taste they sound almost as inartistic and quite as inexcusable as flowers dyed to an unnatural color. Surely foliage and blossoms encrusted with white paste cannot make a really beautiful effect, while in the hottest weather there can be nothing more cool and pleasant to the eye than arrangements of naturally white blossoms, or even of delicate sprays of green leafage, accompanied by no flowers at all.

About five tons of the seed of a yellow Onion are annually produced in the state of Oregon. The yield varies with the soil and season, and the presence or absence of mildew, which is the only disease, so far, to which the crop is subject there; but an acre will yield on an average 500 pounds. In harvesting, the heads are cut off separately and let fall into baskets, and when these are full they are emptied into sacks which are placed upright at suitable distances apart. When filled the sacks are conveyed to drying-sheds, and the heads are spread thinly on platforms that are raised above each other, six or seven high, where they remain for a week or two till nearly dry. They are then taken into the sunshine and spread on large cloths for a few hours, when they are ready for threshing. Threshing is usually done by barefooted horses on a tight floor, and the seed is winnowed out through a mill and afterward washed in clean water, so that the light seed can be skimmed off and removed. The heavy seed is then taken out of the water, dried quickly to prevent sprouting, fanned once more, and it is ready for market.

A recent number of the *Revue de l'Horticulture Belge* declares that at the exhibition of the Royal Agricultural and Botanical Society of Ghent, which was to open on the 13th of November, an interesting surprise would be presented to lovers of Chrysanthemums. "Inspired, it seems," says the writer, "by the example of processes in vogue in China, an amateur of Ghent, Monsieur Alexis Callier, has grafted Chrysanthemums on Anthemis frutescens, and the result he has attained is so extraordinary that this mode of culture will revolutionize the world of chrysanthemophiles. To-day we will simply cite a few facts, promising more detailed information after the exhibition opens. The variety Val d'Andorre, for instance, which was grafted in February, has attained a height of five feet eight inches, while its head is six feet eight inches in diameter and bears 380 budding shoots. An Etoile de Lyon, with a head five feet in diameter, shows 150 budding shoots. A variety with large white flowers, grown from seed by Monsieur Callier, measures about seven feet in height, and is likewise a mass of buds; and a Paul Fabre will carry not less than 300 of its bright red, brilliant blossoms. This variety was grafted in April."

Catalogues Received.

Orange Judd Co., New York; Rural Books.—Harlan P. Kelsey, Highlands Nursery, Linville, Mitchell County, N. C.; Wholesale offers of Native North American Ornamental Plants.—Wm. Parry, Parry, N. J.; Small Fruit Plants, Fruit, Nut and Ornamental Trees.—F. S. Phœnix, Bloomington, Ill.; The Lincoln Pear.—Pitcher & Manda, The United States Nurseries, Short Hills, N. J.; Selected Novelties of Chrysanthemums.—Reasoner Brothers, Royal Palm Nurseries, Oneco, Fla.; Tropical, Semi-tropical and Hardy Fruit and Ornamental Plants.—Frederick Roemer, Quedlinburg, Germany; Novelties in Flower Seed.—Mrs. Theodosia B. Shepherd, Ventura-on-the-Sea, Cal.; Wholesale Trade List of New and Rare Seeds, Bulbs, Plants and Cacti.